

REMARKS

Claims 1-38 are pending in the application.

Claims 1-23 stand rejected. Claims 24-38 have been added.

Formal Matters

Applicant thanks the Examiner for thoughtfully considering the response mailed October 14, 2003.

Rejection of Claims under 35 U.S.C. §103

Claims 1-23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Shinohara, U.S. Patent No. 6,067,298 (hereinafter "Shinohara"), in view of Khacherian et al., U.S. Patent No. 5,768,257 (hereinafter "Khacherian"). Applicants respectfully traverse this rejection.

The cited art fails to teach or suggest a system in which, "approximately when the output traffic manager drops outbound packets or is about to drop said outbound packets, the output traffic manager communicates to the ingress receiver to drop inbound packets destined for the selected queue," as recited in claim 1. As noted by the Examiner, "Shinohara fails to teach the output traffic manager communicates to the ingress receiver to drop inbound packets destined for that queue." Office Action, pp. 2-3. Khacherian also fails to teach or suggest this feature. Khacherian teaches a system in which an "input port buffer control unit cannot release a discrete information unit from its input buffer to the destination output port (via the switch fabric and output rate buffer unit) without the explicit consent of the destination port's output data flow control unit." Khacherian, col. 3, line 64-col. 4, line 2. In Khacherian, the input buffer requests permission to release a discrete information unit to the switching fabric and then waits for the output port to grant the request. When the request is granted, the "source input port's input buffer control unit then releases the discrete information unit to the switch fabric for final delivery to the destination port's output rate buffer unit." Khacherian, col. 4. lines 36-51. Thus, while the output port controls whether the input port releases a

discrete information unit to the switching fabric by controlling when the requests are granted, the input port clearly fails to “communicate to the ingress receiver to drop inbound packets,” as recited in claim 1 (emphasis added). Accordingly, Khacherian, both alone and in combination with Shinohara, clearly fails to teach or suggest claim 1.

Furthermore, neither Shinohara nor Khacherian would be expected to suggest the claimed invention, given that neither reference suggests a need to drop packets in the input receiver in response to communication from an output traffic manager. Instead, both references focus on flow control mechanisms that determine when one stage of a switch can release packets to another stage. For example, as noted above, in Khacherian an “input port buffer control unit cannot release a discrete information unit from its input buffer to the destination output port (via the switch fabric and output rate buffer unit) without the explicit consent of the destination port’s output data flow control unit.” Khacherian, col. 3, line 64-col. 4, line 2. Likewise, in Shinohara, in “each output line corresponding queue within the output buffer module section 30, when the queue length Qoxbl exceeds the threshold value Qth_bpoxbl, the output buffer module section 30 originates the back pressure signal (BP_OXBL) 70 to all input buffer module sections. The input buffer module section 20 ceases to transmit cells to the output line to which the BP_OXBL signal 70 has been originated.” Shinohara, col. 8, lines 12-20. Thus, both references teach a flow control technique to control when packets are released by an input stage, not a technique to control when packets are dropped. Accordingly, the references would not be expected to suggest an “output traffic manager [that] communicates to the ingress receiver to drop inbound packets destined for the selected queue”, as recited in claim 1.

Claim 1 is patentable over the cited art for at least the foregoing reasons, as are dependent claims 2-14. Claims 15-38 are patentable for similar reasons.

Further, with respect to claim 7, 22, 30, and 38, the cited art fails to teach or suggest an ingress receiver that discontinues inbound packet drop after a predetermined time, as recited in claim 7. The Examiner relies on Shinohara to reject this claim. The cited portion of Shinohara recites:

“The ATM switching system of claim 2, wherein said rate computing means periodically computes an acceptable rate for each service class based on a status time change of said virtual queue by service class or said output line corresponding queue of said output buffer module section, and wherein said input buffer module section further includes an internal rate control means that controls a cell transmission for each output line based on said acceptable rate.” Col. 14, lines 38-46.

This section simply describes how the input buffer module of Shinohara controls cell transmissions based on an acceptable rate. Furthermore, the quoted section focuses on controlling cell transmissions, not on controlling whether packets are dropped. No teaching or suggestion concerning whether packet drop should be discontinued is provided, nor would such a teaching or suggestion be expected, given that the quoted section is not concerned with packet drop. The combination of Khacherian and Shinohara also fails to provide such a suggestion. Accordingly, claim 7 is clearly patentable over the cited art. Claims 22, 30, and 38 are additionally patentable over the cited art for similar reasons.

Added Claims

Claims 24-38 have been added. Support for claims 24-30 is found, at least in claims 1-24 and in lines 12-14 and 31-32 of page 8 of the specification. Support for claims 31-38 is found, at least, in claims 1-24 and Figs. 2-3 of the specification. These claims are patentable over the cited art for reasons similar to those provided above with respect to claim 1.

CONCLUSION

In view of the amendments and remarks set forth herein, the application is believed to be in condition for allowance and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephone interview, the Examiner is invited to telephone the undersigned at 512-439-5080.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on April 5, 2004.

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4-5-2004

Date of Signature

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